

TOP SECRET "C" SUB
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1. A water repellent silicone coating agent composition comprising
(A) 100 parts by weight of diorganopolysiloxane having a viscosity of 20 to 20,000 mPa·s at 25°C in which the terminal ends of the molecular chain are blocked by silanol groups or silicon-bonded hydrolyzable groups,
(B) 5 to 100 parts by weight of a cross-linking agent represented by general formula R_aSiX_{4-a} in which R is a monovalent hydrocarbon group comprising 1 to 10 carbon atoms, X is a hydrolyzable group, and subscript a is an integer of 0 to 2,
(C) 0.1 to 20 parts by weight of a condensation reaction catalyst,
(D) 8 to 50 parts by weight of a hydrophobic surface treated dry process silica having a carbon content of 3.7 to 5% by weight and a bulk density of 40 to 99 g/L, or a hydrophobic surface treated dry process silica having a carbon content of 2.7 to 5% by weight and a bulk density of 100 to 300 g/L,
(E) 1 to 10 parts by weight of an organic functional silane coupling agent-based adhesion-imparting agent,
(F) an organic solvent having a boiling point of 100 to 200°C in an amount of 4 to 100 wt% based on the total of component (A) to component (E), and optionally
(G) 1 to 50 parts by weight of a non-reactive silicone fluid having a viscosity of 10 to 10,000 mPa·s at 25°C.
2. A composition according to claim 1 where component (A) is dimethylpolysiloxane having both terminal ends of the molecular chain blocked by silanol or methoxy groups.
3. A composition according to claim 1 where component (A) has a viscosity of 40 to 15,000 mPa·s at 25°C.

4. A composition according to claim 1 where component (B) is selected from the group consisting of tetrakis(methylethylketoxime)silane, methyl tris(methylethylketoxime)silane, vinyl tris(methylethylketoxime)silane, methyltrimethoxysilane, methyltriethoxysilane, dimethyldimethoxysilane, dimethyldiethoxysilane, methyltriacetoxysilane, tetramethoxysilane, tetraethoxysilane, methyltriisopropenoxysilane, tetraisopropenoxysilane, and methyl tri(N,N-diethylamino)silane.
5. A composition according to claim 1 where component (B) is methyl tris(methylethylketoxime)silane.
6. A composition according to claim 1 comprising 8 to 40 parts by weight of component (B) per 100 parts by weight of component (A).
7. A composition according to claim 1 comprising 1 to 15 parts by weight component (C) per 100 parts by weight of component (A).
8. A composition according to claim 1 where the dry process silica of component (D) is treated with hexamethyldisilazane.
9. A composition according to claim 1 where component (D) has a carbon content within a range of from 3.8 to 4.5% by weight and a bulk density within a range of from 50 to 95 g/L.
10. A composition according to claim 1 where component (D) has a carbon content within a range of from 2.8% to 4% by weight and a bulk density of 100 to 200 g/L.
11. A composition according to claim 1 comprising 9 to 40 parts by weight of component (D) per 100 parts by weight of component (A).

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12. A composition according to claim 1 comprising 1.5 to 8 parts by weight of component (E) per 100 parts by weight of component (A).
13. A composition according to claim 1 where component (E) is selected from the group consisting of γ -aminopropyltrimethoxysilane, γ -aminopropyltriethoxysilane, 3-(2-aminoethyl)aminopropyltrimethoxysilane, 3-(2-aminoethyl)aminopropylmethyldimethoxysilane, 3-glycidoxypropyltrimethoxysilane, 3-glycidoxypropyltriethoxysilane, and 3-glycidoxypropylmethyldimethoxysilane.
14. A composition according to claim 1 where component (E) is selected from the group consisting of aminosilanes, epoxysilanes, and reaction products of the aminosilanes and the epoxysilanes.
15. A composition according to claim 1 comprising 10 to 50 weight percent of component (F) relative to the total of component (A) to component (E).
16. A composition according to claim 1 where component (G) is a polydiorganosiloxane that does not contain in its molecule condensation reactive groups.
17. A composition according to claim 16 where aralkyl groups constitute 2 to 40% of the total amount of silicon-bonded organic groups of component (G).

18. A composition according to claim 1 where component (G) is chosen from a fluid polydimethylsiloxane modified with polyoxyalkylene; a fluid copolymer of dimethylsiloxane, methyl(2-phenylpropyl)siloxane, and methyloctylsiloxane, a fluid copolymer of dimethylsiloxane and methyl(2-phenylpropyl)siloxane; a fluid copolymer of dimethylsiloxane and diphenylsiloxane; a fluid copolymer of dimethylsiloxane and methylvinylsiloxane; a fluid copolymer of dimethylsiloxane and methylphenylsiloxane; and a polydimethylsiloxane fluid having both molecular ends capped with trimethylsiloxy groups.

19. A composition according to claim 1 where component (G) is a polydimethylsiloxane fluid having both terminal ends blocked by trimethylsiloxy groups.

20. A composition according to claim 1 comprising 5 to 40 parts by weight of component (G) per 100 parts by weight of component (A).

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